



FIGURE 1: ISS-pST gene construct

1 GCTAGCATGG CCCTGTGGAT GCGCCTCCTG CCCCTGCTGG CGCTGCTGGC  
5 51 CCTCTGGGGA CCTGACCCAG CCGCAGCCCT CGAGATGTTT CCAGCTATGC  
101 CACTTCTTTC TCTGTTCGCT AACGCTGTTC TTCGGGCCCCA GCACCTGCAC  
151 CAACTGGCTG CCGACACCTA CAAGGAGTTT GAGCGCGCCT ACATCCCGGA  
201 GGGACAGAGG TACTCCATCC AGAACGCCCCA GGCTGCCTTC TGCTTCTCGG  
251 AGACCATCCC GGCCCCCAGG GGCAAGGACG AGGCCCAGCA GAGATCGGAC  
10 301 GTGGAGCTGC TGCGCTTCTC GCTGCTGCTC ATCCAGTCGT GGCTCGGGCC  
351 CGTGACAGTTC CTCAGCAGGG TCTTCACCAA CAGCCTGGTG TTTGGCACCT  
401 CAGACCGCGT CTACGAGAAG CTGAAGGACC TGGAGGAGGG CATCCAGGCC  
451 CTGATGCGGG AGCTGGAGGA TGGCAGCCCC CGGGCAGGAC AGATCCTCAA  
501 GCAAACCTAC GACAAATTTG ACACAACTT GCGCAGTGAT GACGCGCTGC  
15 551 TTAAGAACTA CGGGCTGCTC TCCTGCTTCA AGAAGGACCT GCACAAGGCT  
601 GAGACATACC TGCGGGTCAT GAAGTGTCGC CGCTTCGTGG AGAGCAGCTG  
651 TGCCTTCTAG TCTAGA (SEQ ID NO:3)

20 ATG...GCC- insulin secretory signal.

GCTAGC- *Nhe* I restriction site incorporated into construct in order to ligate into plasmid.

CTCGAG- *Xho* I restriction site incorporated into construct in order to ligate secretory signal and pST.

25 TCTAGA- *Xba* I restriction site incorporated into construct in order to ligate into plasmid.



2/13

**FIGURE 2: ISS-pST peptide sequence.**

1 MALWMRLPL LALLALWGPD PAAALEMFPA MPLSSLFANA VLRAQHLHQL  
5 51 AADTYKEFER AYIPEGQRYIS IQNAQAACF SETIPAPT GK DEAQQRSDVE  
101 LLRFSLLLIQ SWLGPVQFLS RVFTNSLVFG TSDRVYEKLK DLEEGIQALM  
151 RELEDGSPRA GQILKQTYDK FDTNLRSDDA LLKNYGLLSC FKKDLHKAET  
201 YLRVMKCRRF VESSCAF (SEQ ID NO:2)

10

MAL....AAA- insulin secretory signal, cleaved upon secretion of pST.

LE- function of XhoI cleavage site; result in no predicted secondary structural changes to pST.

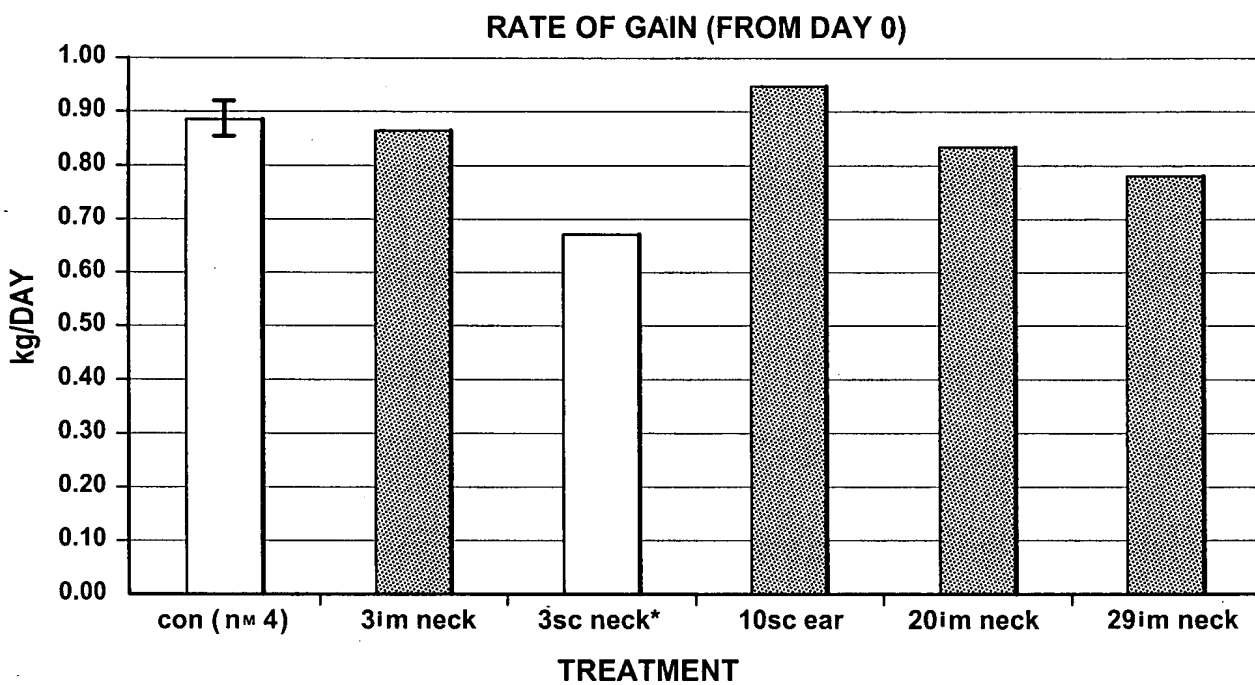


Fig. 3



4/13

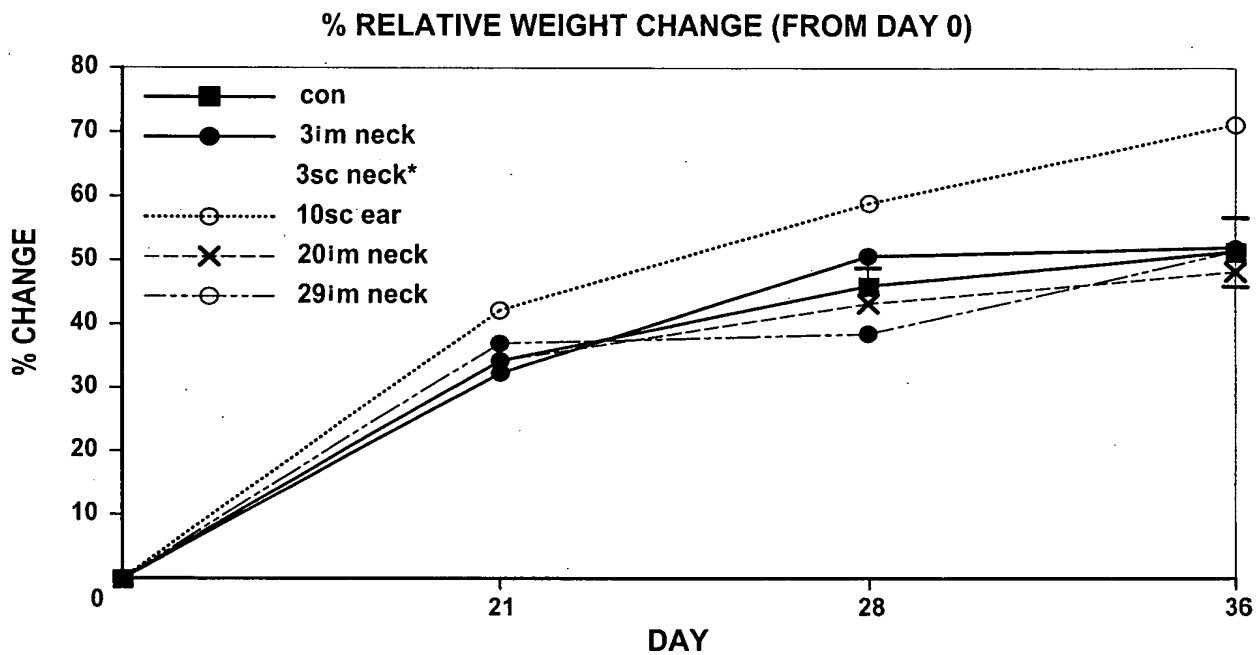


Fig. 4

PLASMA pST

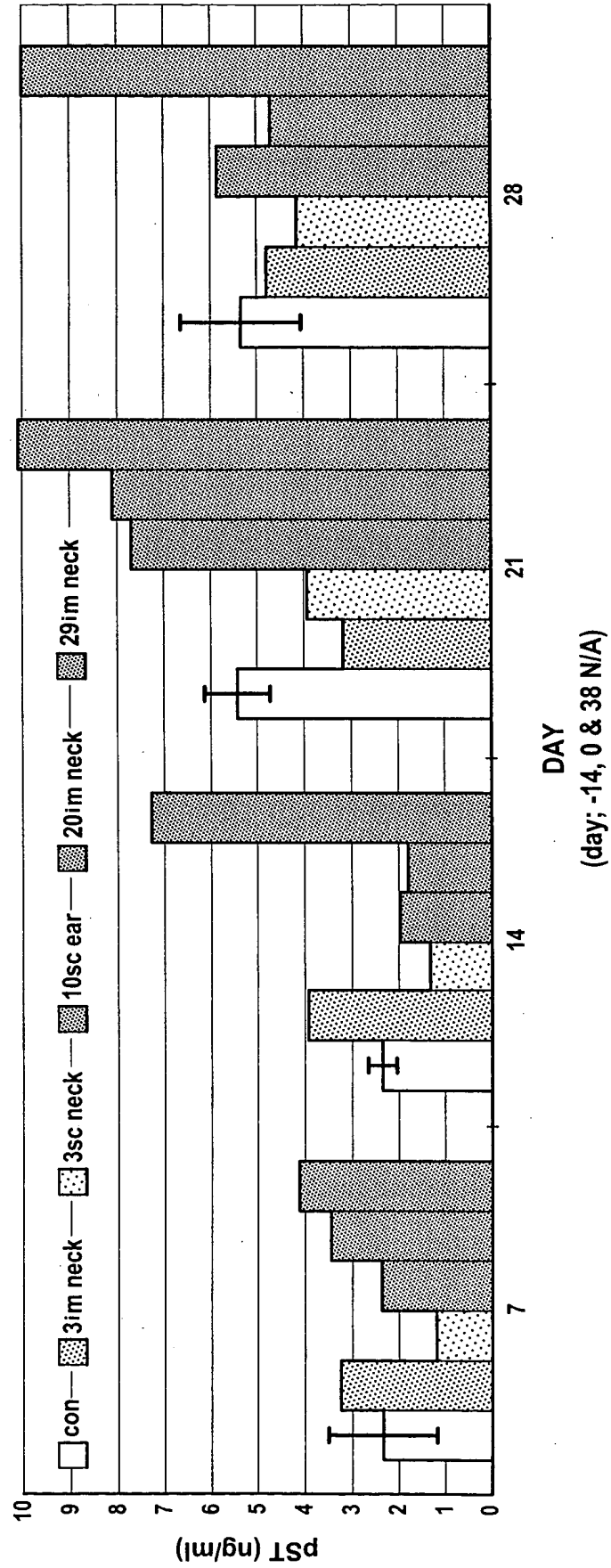
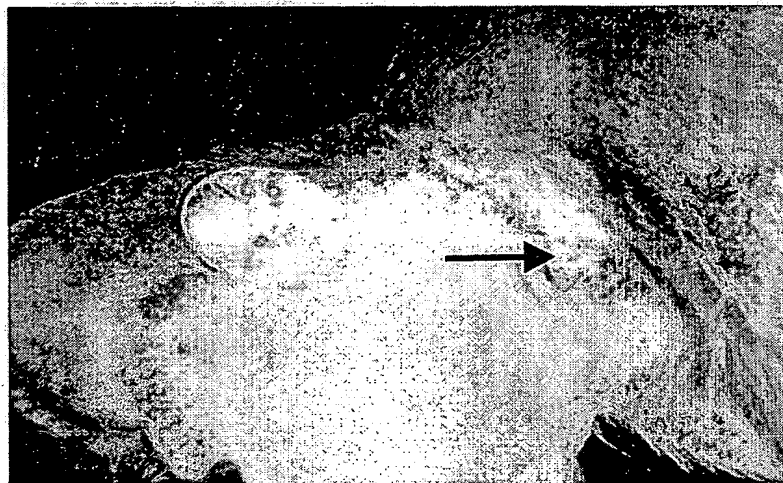


Fig. 5

# Plate 1



# Plate 2



**Fig. 6**

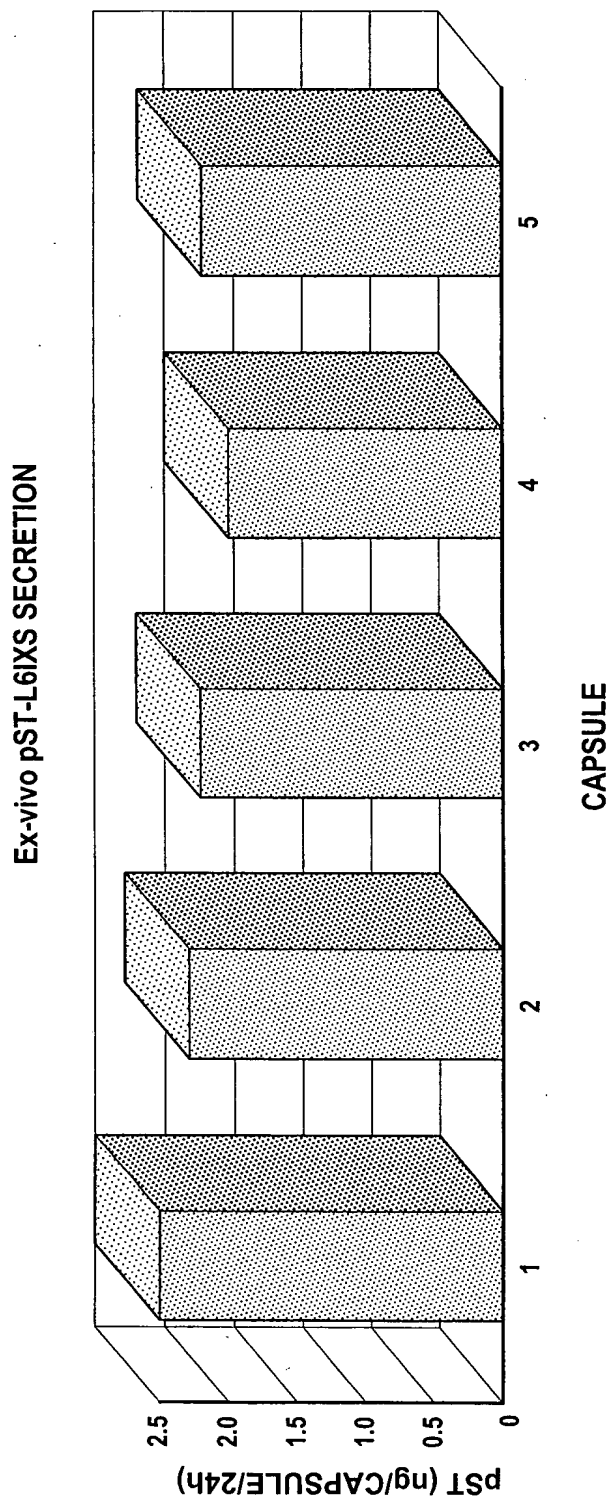


Fig. 7

MEAN PLASMA pST (OVER 3 HOURS @ 30 min. INTERVALS) BEFORE (WHITE BARS)  
 AND 1 WEEK POST pST CAPSULE ADMINISTRATION (BLACK BARS) (\* SIGNIFICANT).

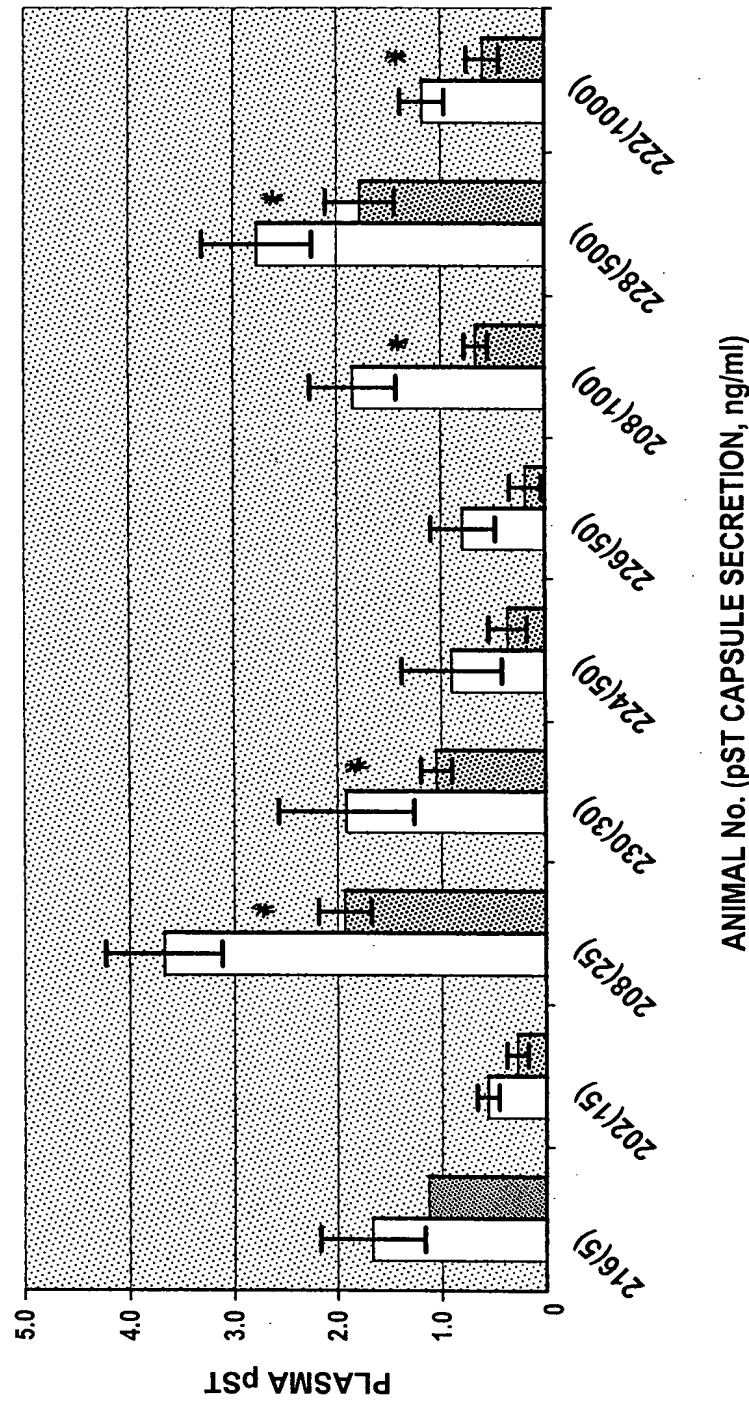


Fig. 8



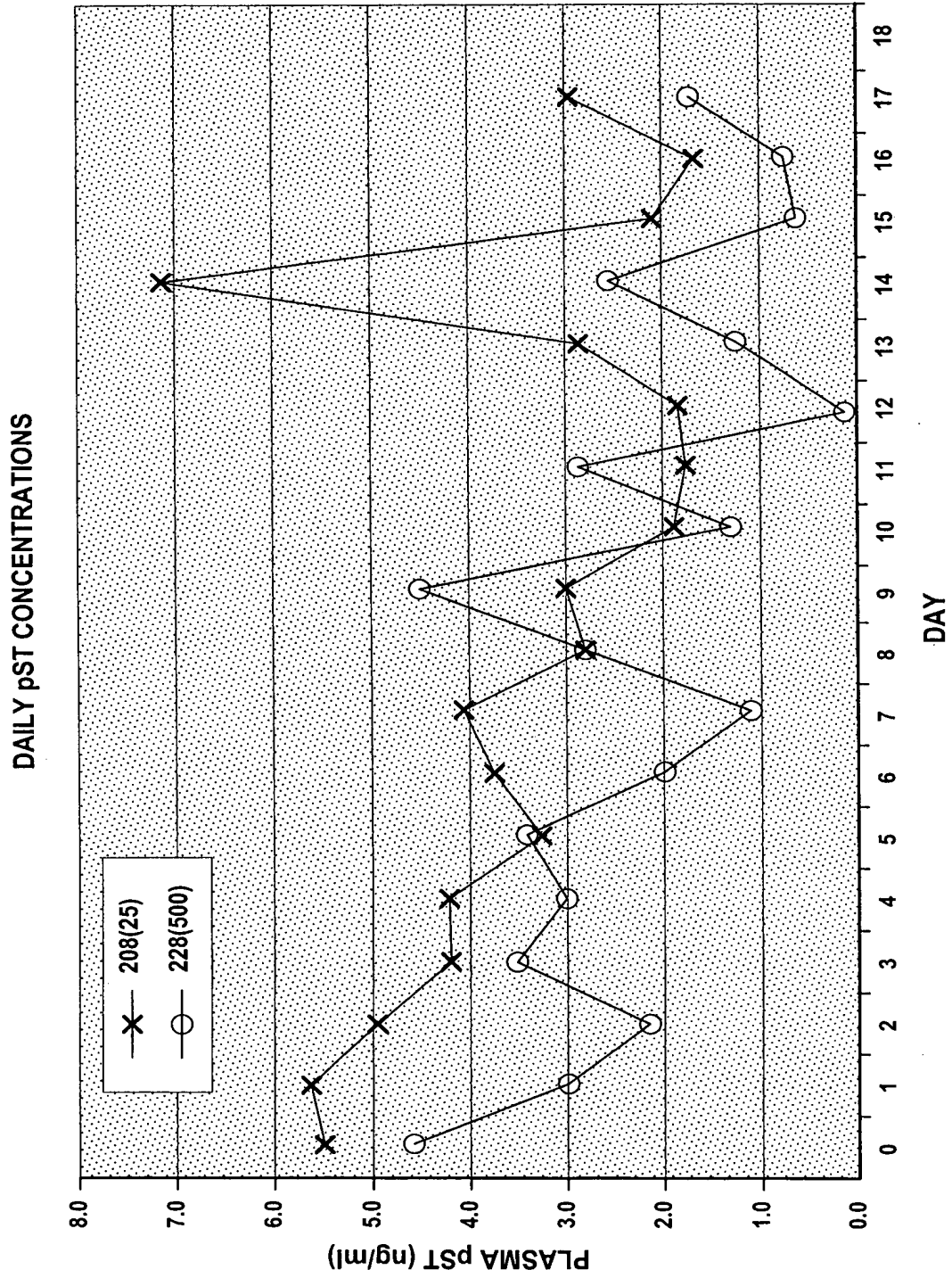


Fig. 9



10/13

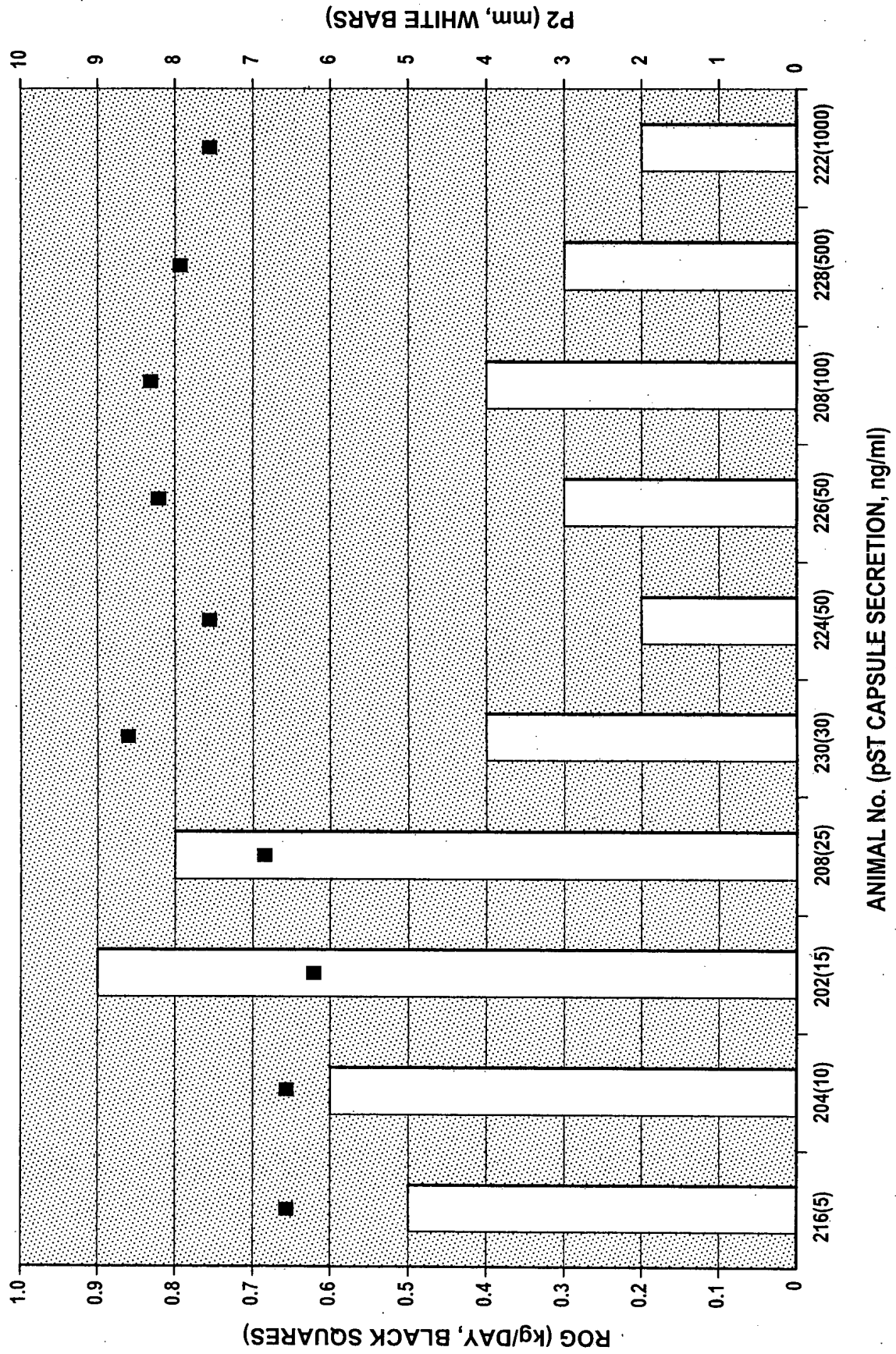


Fig. 10



11/13

RATE OF GAIN OF MALE PIGS FOLLOWING IMPLANTATION WITH pST SECRETING OR CONTROL IMMUNO-NEUTRAL GENE THERAPY (IGT) CAPSULES ( $\pm$  SEM).

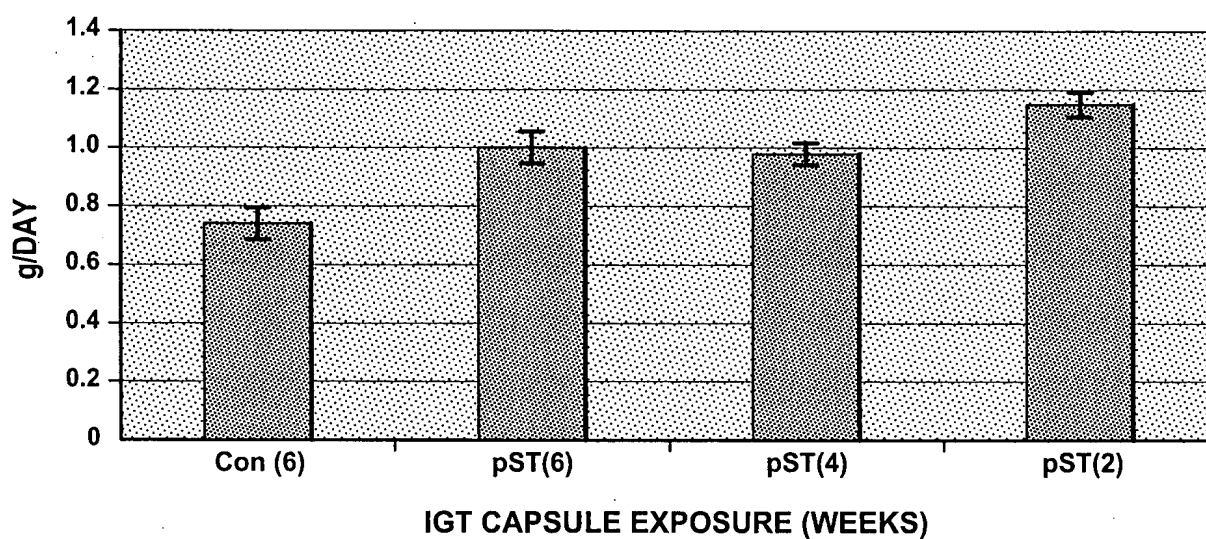
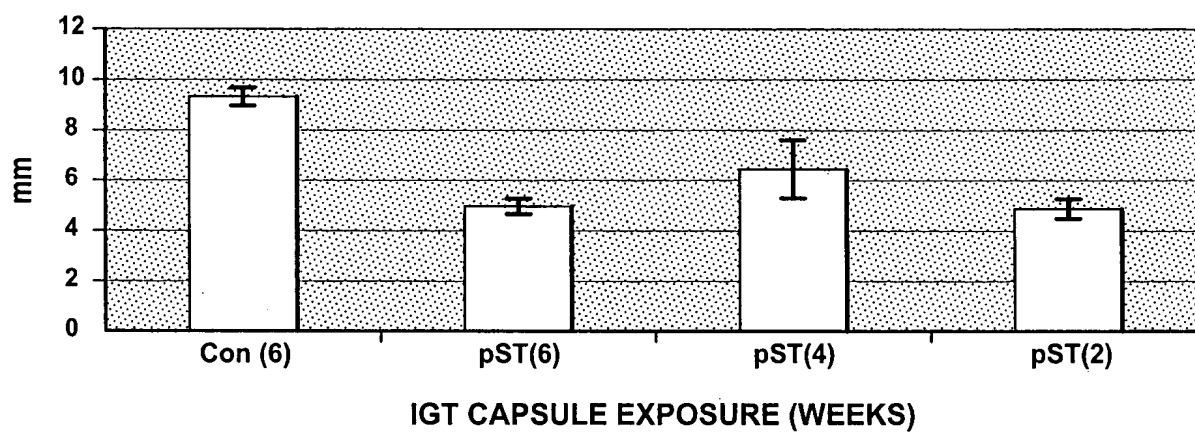


Fig. 11



12/13

**BACK FAT (P2) OF MALE PIGS FOLLOWING IMPLANTATION WITH pST SECRETING  
OR CONTROL IMMUNO-NEUTRAL GENE THERAPY (IGT) CAPSULES ( $\pm$ SEM).**



**Fig. 12**



LOIN (EYE) MUSCLE AREA OF MALE PIGS FOLLOWING  
IMPLANTATION WITH pST SECRETING  
OR CONTROL IMMUNO-NEUTRAL GENE THERAPY (IGT) CAPSULES ( $\pm$ SEM).

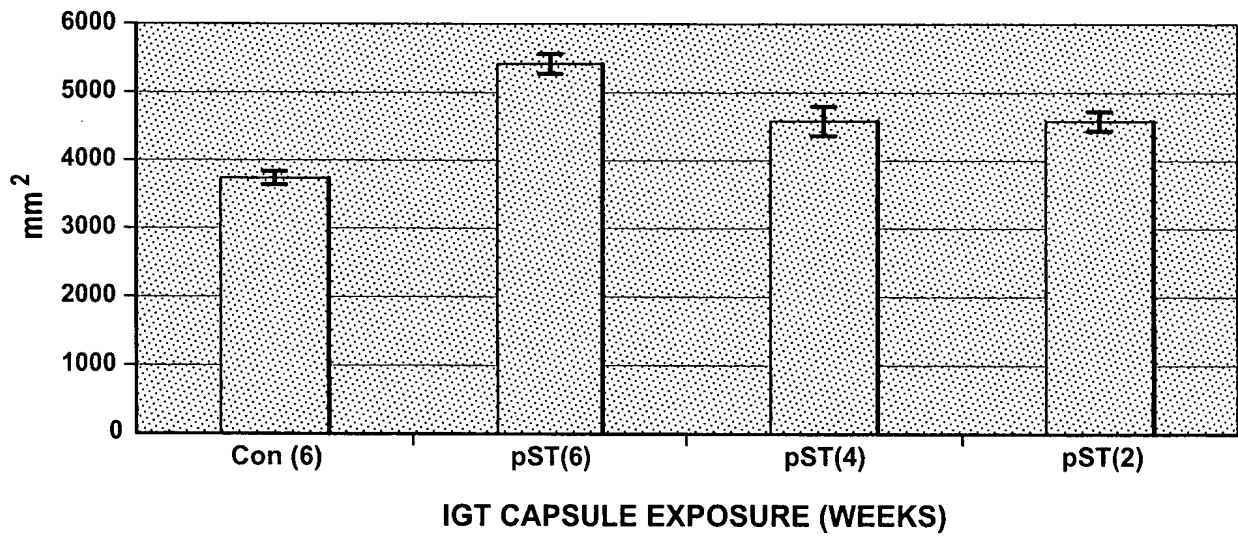


Fig. 13